



National Transportation Safety Board Aviation Incident Final Report

Location:	COLORADO SPRNGS, CO	Incident Number:	FTW981A208
Date & Time:	05/07/1998, 2130 MDT	Registration:	N116FE
Aircraft:	Boeing 727-25C	Aircraft Damage:	Minor
Defining Event:		Injuries:	3 None
Flight Conducted Under:	Part 121: Air Carrier - Scheduled		

Analysis

Federal Express flight 1287 departed Colorado Springs, en route to Memphis, Tennessee. When the airplane was north of the airport and passing 8,500 feet msl, it struck a flock of large white birds, causing an uncontained no. 3 engine failure. There was also a loss of essential electrical power. The captain declared an emergency, returned to the Colorado Springs Airport, and made an uneventful landing. In addition to minor damage to the right side of the fuselage, visual inspection of the engine disclosed bird remains in and around the no. 3 engine. The outboard 4 inches of the first stage compressor blade separated, damaging the first and second stage compressor blades, stator blades, and inlet guide vanes. Shrapnel was ejected through the engine case at the 12 o'clock position, severing the no. 3 electrical bus wire bundle and puncturing the engine inlet anti-ice bleed air duct. The nose and upper engine cowl and thrust reverser were also damaged. The constant speed drive oil cooler was partially separated due to engine vibrations.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be: An inadvertent inflight collision with a flock of large birds.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: CLIMB

Findings

1. (C) OBJECT - BIRD(S)

Occurrence #2: LOSS OF ENGINE POWER

Phase of Operation: CLIMB

Findings

2. COMPRESSOR ASSEMBLY, BLADE - FOREIGN OBJECT DAMAGE

3. ENGINE SHUTDOWN - INTENTIONAL - PILOT IN COMMAND

Factual Information

On May 7, 1998, approximately 2130 mountain daylight time, a Boeing 727-25C, N116FE, operated by Federal Express Corporation of Memphis, Tennessee, sustained minor damage when it struck a flock of birds during climbout from Colorado Springs, Colorado. There were no injuries to the airline transport rated captain, first officer, and second officer. Visual meteorological conditions prevailed, and an IFR flight plan was filed for the scheduled domestic cargo flight being operated under Title 14 CFR Part 121. The flight originated approximately 2120.

According to the incident report submitted by Federal Express, flight 1287 took off from Colorado Springs, and was en route to Memphis, Tennessee. When the airplane was north of the airport and passing 8,500 feet msl, it struck "a flock of large white birds." The crew felt "moderate to severe vibrations due to the ingestion of one or more birds into the no. 3 engine." This caused an uncontained engine failure. There was also a loss of essential electrical power. After restoring electrical power using the no. 1 generator, the captain declared an emergency, returned to the Colorado Springs Airport, and made an uneventful landing.

The right hand side of the airplane sustained all the damage. The radome was damaged, and there was a tear in the skin behind the radome. A doubler at F.S. 196 was damaged, and there were multiple skin dents below the pitot-static tube.

Visual inspection of the engine disclosed bird remains in and around the no. 3 engine. The outboard 4 inches of the first stage compressor blade separated, damaging the first and second stage compressor blades, stator blades, and inlet guide vanes. Shrapnel was ejected through the engine case at the 12 o'clock position, severing the no. 3 electrical bus wire bundle and puncturing the engine inlet anti-ice bleed air duct. The nose and upper engine cowl and thrust reverser were also damaged. The constant speed drive oil cooler was partially separated due to engine vibrations.

According to a report submitted by Lufthansa Airmotive Ireland, the facility that disassembled and inspected the no. 3 engine, there was "severe front and rear compressor damage." One of the C1 blades fractured and penetrated the front fan case at the 12 o'clock position. There was also "heavy metal splatter" on all stages of the turbine discs and nozzle guide vanes.

Ingested bird remains were submitted to the Smithsonian Institute and were identified as coming from a Canadian goose. The report stated that the average weight of a Canadian goose is 8 pounds.

Pilot Information

Certificate:	Airline Transport; Commercial; Flight Engineer	Age:	38, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	01/28/1998
Occupational Pilot:	Last Flight Review or Equivalent:		
Flight Time:	3051 hours (Total, all aircraft), 2386 hours (Total, this make and model), 638 hours (Pilot In Command, all aircraft), 34 hours (Last 90 days, all aircraft), 9 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Boeing	Registration:	N116FE
Model/Series:	727-25C 727-25C	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	19298
Landing Gear Type:	Retractable - Tricycle	Seats:	5
Date/Type of Last Inspection:	03/05/1998, Continuous Airworthiness	Certified Max Gross Wt.:	169500 lbs
Time Since Last Inspection:		Engines:	3 Turbo Jet
Airframe Total Time:	63119 Hours	Engine Manufacturer:	P&W
ELT:	Not installed	Engine Model/Series:	JT8D-7BQN
Registered Owner:	FEDERAL EXPRESS CORPORATION	Rated Power:	14000 lbs
Operator:	FEDERAL EXPRESS CORPORATION	Operating Certificate(s) Held:	Air Cargo; Supplemental
Operator Does Business As:		Operator Designator Code:	FDEA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	COS, 6184 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	2158 MDT	Direction from Accident Site:	0°
Lowest Cloud Condition:	Unknown / 0 ft agl	Visibility	10 Miles
Lowest Ceiling:	Broken / 10000 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	9 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	360°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	7° C / 4° C
Precipitation and Obscuration:			
Departure Point:	(COS)	Type of Flight Plan Filed:	IFR
Destination:	MEMPHIS, TN (MEM)	Type of Clearance:	IFR
Departure Time:	2120 MDT	Type of Airspace:	Class E

Wreckage and Impact Information

Crew Injuries:	3 None	Aircraft Damage:	Minor
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	ARNOLD W SCOTT	Report Date:	05/19/1999
Additional Participating Persons:	JOSEPH J JORDON; DENVER, CO		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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